

Customer No.: 31561
Application No.: 10/064,615
Docket No.: 9034-US-PA

AMENDMENT

Please amend the application as indicated hereafter.

In the Claims :

Claim 1.(original) An online firmware update system, applied in a liquid crystal panel display controller, the online firmware update system comprising:

a rewritable memory, containing a main control program with a writing function, wherein the main control program by the writing function can be erased from the rewritable memory and an upgrade main control program can be written into the rewritable memory via the write pin; and

a controller, coupled to the rewritable memory, comprising:

a built-in storage unit, temporarily storing an update subroutine of the main control program by using a continuous mapping address, wherein the built-in storage unit comprises a control register for temporarily storing a control signal;

a microprocessor, built at outside or inside of the controller; and

a control interface, coupled to the rewritable memory, the built-in storage unit and the microprocessor, wherein the control interface receives the control signal temporarily stored in the control register of the built-in storage unit to determine a fetch priority of the built-in storage unit and the rewritable memory and to build up a write channel between the microprocessor and the rewritable memory;

wherein the microprocessor reads out the update subroutine stored in the rewritable memory, writes the update subroutine into the continuous mapping address of the built-in

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storage unit by the control interface, and fetches and executes the update subroutine in the built-in storage unit to write the upgrade main control program into the rewritable memory.

Claim 2. (original) The online firmware update system of claim 1, wherein the type of the rewritable memory comprises a flash-ROM or an EEPROM.

Claim 3. (original) The online firmware update system of claim 1, wherein the main control program and the update subroutine have a function call relationship.

Claim 4. (original) The online firmware update system of claim 1, wherein the storage address of the rewritable memory used to store the update subroutine is different from the storage address of the built-in storage unit used to store the update subroutine.

Claim 5. (original) The online firmware update system of claim 1, wherein if a fetch address sent by the microprocessor is equal to the continuous mapping address, the fetch priority belongs to the built-in storage unit.

Claim 6. (original) The online firmware update system of claim 1, wherein if a fetch address sent by the microprocessor is not equal to the continuous mapping address, the fetch priority belongs to the rewritable memory.

Claims 7-17 (cancelled)

Claim 18. (original) An online firmware update method, applied in the liquid crystal panel display, wherein the liquid crystal panel display comprises a controller, which can be implemented internal or external of a microprocessor, and a rewritable memory, the online firmware update method comprises the steps of:

copying an update subroutine of the rewritable memory into a built-in storage unit of the controller;

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enabling a control signal of the controller;
calling the update subroutine of the built-in storage unit by using a function call;
erasing the rewritable memory;
downloading an upgrade main control program; and
writing the upgrade main control program into the rewritable memory to accomplish the online firmware update operation of the rewritable memory.

Claim 19. (original) The online firmware update method of claim 18, wherein the rewritable memory comprises a main control program, the main control program comprises the update subroutine, moreover the main control program and the update subroutine have a function call relationship.

Claim 20. (original) The online firmware update method of claim 19, wherein the step of erasing the rewritable memory erases the main control program in the rewritable memory.

Claim 21. (original) The online firmware update method of claim 18, wherein the step of enabling the control signal builds up a write channel between the controller and the rewritable memory.

Claim 22. (original) The online firmware update method of claim 18, wherein the storage address of the rewritable memory used to store the update subroutine is different from the storage address of the built-in storage unit used to store the update subroutine.

Claim 23. (original) The online firmware update method of claim 18, wherein the type of the rewritable memory comprises a flash-ROM or an EEPROM.

Claims 24-28 (cancelled)